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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 10/069,556      | 02/22/2002  | William S Gornall    | B - 5               | 3251             |

7590 05/27/2004

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EXAMINER

CONNOLLY, PATRICK J

ART UNIT PAPER NUMBER

2877

DATE MAILED: 05/27/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

|                              |                                |                                |  |
|------------------------------|--------------------------------|--------------------------------|--|
| <b>Office Action Summary</b> | Application No.<br>10/069,556  | Applicant(s)<br>GORNALL ET AL. |  |
|                              | Examiner<br>Patrick J Connolly | Art Unit<br>2877               |  |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
  - If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
  - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
  - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 12 April 2004.
- 2a) ☐ This action is FINAL.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-22 and 24-26 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-22 and 24 is/are allowed.
- 6) ☒ Claim(s) 25 is/are rejected.
- 7) ☒ Claim(s) 26 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 22 February 2002 is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Response to Arguments*

Applicant's arguments, see Paper 04062004, filed April 6, 2004, with respect to the rejections of claims 25 and 26 under U.S.C. 102(b) and claims 12-16 under U.S.C. 103(a) have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground of rejection is made with respect to claim 25 in view of U.S. Patent No. 4,319,843 to Gornall.

### *Claim Rejections - 35 USC § 102*

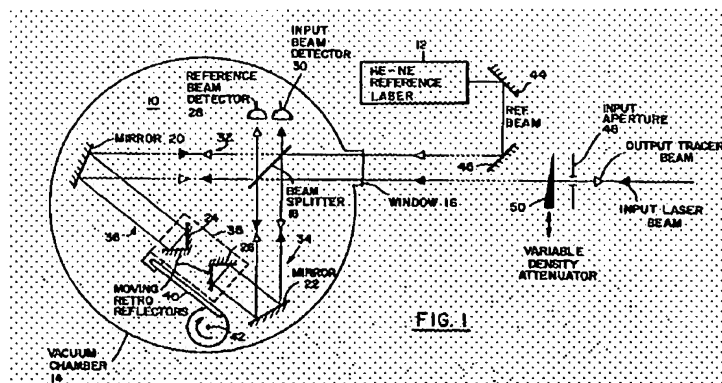
The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claim 25 is rejected under 35 U.S.C. 102(b) as being clearly anticipated by U.S. Patent No. 4,319,843 to Gornall.

As to claim 24, Gornall discloses an interferometer for measuring wavelength or frequency including (see Figure 1 below):



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means for propagating beams simultaneously or successively in coincident relationship along an optical path that undergoes a change in length (16, 20, 22, 24, 26, 36), and means responsive to interference in said beams for measuring said wavelength of an input beam with respect to a reference beam (28, 30).

***Allowable Subject Matter***

Claim 26 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

As to claim 26, the prior art of record, taken alone or in combination, fails to disclose or render obvious an interferometer for measuring wavelength of a beam of unknown wavelength with respect to a reference beam of known wavelength which comprises means for propagating said beams simultaneously or successively in a coincident relationship along an optical path that undergoes a change in length, including an oscillatory bar having at least one retroreflector and a fixed mirror for defining an optical path that undergoes said change in length, in combination with the rest of the limitations of claim 26.

Claims 1-22 and 24 are allowed.

As to claim 1, the prior art of record, taken alone or in combination, fails to disclose or render obvious an interferometer wavelength meter including: a fixed retroreflector having a reflecting surface spaced from an oscillating bar and parallel thereto when said oscillating bar is in a position intermediate to an arc within the bending limit of a flexural pivot, in combination with the rest of the limitations of claim 1.

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As to claim 12, the prior art of record, taken alone or in combination, fails to disclose or render obvious a Michelson interferometer with an oscillatory bar, flexural pivot bearing said bar for oscillation over an angular range of travel, a retroreflector carried on said bar, and means for projecting an input beam of unknown wavelength and a reference beam of know wavelength simultaneously or successively in coincident relationship along an optical path defined by the aforementioned elements, in combination with the rest of the limitations of claim 12.

As to claim 17, the prior art of record, taken alone or in combination, fails to disclose or render obvious an interferometer for measuring wavelength including at least one fixed retroreflector opposite to a retroreflector on an oscillatory bar, where the fixed retroreflector smaller in width than the retroreflector on the bar and has a center offset from the center of the bar's retroreflector, in combination with the rest of the limitations of claim 17.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Patrick J Connolly whose telephone number is 571.272.2412.

The examiner can normally be reached on 9:00 am - 7:00 pm Monday-Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Frank G. Font can be reached on 571.272.2415. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

pjc pjc

5.25.2004



**Samuel A. Turner**  
Primary Examiner